

Penstemon Keckii belongs to the subgenus *Glabri*. Dr. Keck suggests that this plant "is most closely related to *P. speciosus* Dougl. which, in the broad sense, extends from arid eastern Washington, southward through Oregon and the Sierra Nevada to Mount Piños in California and southern Esmeralda County in Nevada." In addition to being widely separated geographically from *P. speciosus*, *P. Keckii* is smaller and occurs at a higher elevation. The following key may serve to separate the two species:

Inflorescence glandular, corolla glandular without and within, copious beard at base of lower lip, sterile stamen strongly bearded	<i>P. Keckii</i>
Inflorescence and corolla not glandular, the latter sometimes with a sparingly bearded throat and sterile stamen	<i>P. speciosus</i>

In appreciation of the work he is doing with western *Penstemon*, it is a pleasure to name this species for Dr. David D. Keck of the Carnegie Institution of Washington at Stanford University.

South Pasadena, California,
June, 1937.

A NEW CALIFORNIAN SPECIES OF BRODIAEA

ROBERT F. HOOVER

Brodiaea appendiculata sp. nov. Cormo magno, sine pro-pagulis, cum tunica crassa fibrosa circum scapum foliaque extendente; foliis 2-4, angustis; scapo 10-40 cm. alto; perianthio infundibuliforme; tubo perianthii cylindrico, basi rotundo, 8-10 mm. longo, in fructo membranaceo; segmentis rectis, 15-20 mm. longis, exterioribus oblongis, acutis, interioribus latioribus obtusis; staminodiis linearibus, 8-12 mm. longis, obtusis vel retusis, margine involutis undulatis; filamentis 4-5 mm. longis, margine alatis, apice biappendiculatis; appendiculis linearibus, 3-5 mm. longis, undulatis; antheris 7-8 mm. longis; capsula subglobosa, apice acuta; seminibus in quoque loculo circa 5.

Corn large, deep-seated, without offsets, with a heavy coat of brown fibers which extends as a sheath around the subterranean portion of the scape and leaves; leaves 2-4, narrow; scapes stout, 1-3 from a corm, 10-40 cm. tall; umbel 3-10 flowered, the pedicels 3-9 cm. long, widely divaricate in age; perianth funnelform; perianth tube cylindrical, rounded at base, green, 8-10 mm. long, in fruit membranaceous, finally brittle; segments straight (that is, not recurved), 15-20 mm. long, purple with dark mid-vein, the outer oblong, acute, the inner broader and obtuse; staminodia purple with white tips, linear, obtuse or retuse, 8-12 mm. long, with involute and undulate margin, approximate around the anthers; stamens shorter than staminodia; filaments 4-5 mm.

long, purple, wing-margined, bearing at apex two appendages which extend along the backs of the anthers; appendages linear, undulate, pale purple or white, 3–5 mm. long, about half as long as the anthers; anthers 7–8 mm. long, deeply notched at both ends; capsule subglobose with acute apex; seeds about five in each cavity.

Type: Warnerville, Stanislaus County, April 29, 1936, *Hoover 1040*.

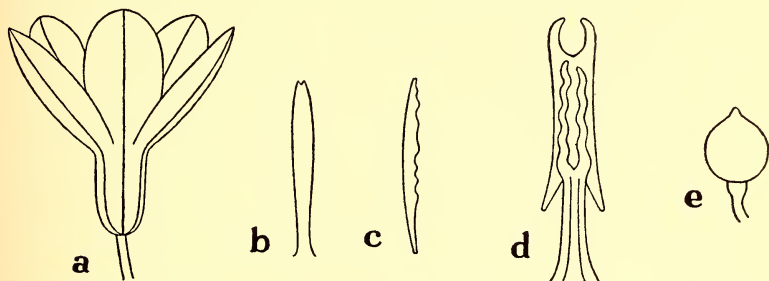


Fig. 1. *Brodiaea appendiculata* Hoover. Outline drawings based on fresh plants: *a*, external view of perianth $\times 1$; *b*, dorsal view of staminodium $\times 2$; *c*, side view of staminodium $\times 2$; *d*, dorsal view of stamen $\times 3$; *e*, mature capsule $\times 1$.

Brodiaea appendiculata is common in the lower Sierra foothills and on the bordering valley plains from Sacramento County to Fresno County. It occurs also, but is apparently rare, in the central Coast Ranges.

Herbaria indicated in the citations below are abbreviated as follows: University of California (UC); California Academy of Sciences (CA); herbarium of W. L. Jepson (J); Dudley Herbarium of Stanford University (S).

Specimens examined. Sacramento County: Sacramento, May, 1919, *Georgia Bentley* (S), *Hoover 1130* (J). Amador County: *Jepson 9957, 9965* (J). Calaveras County: Burson, *Jepson 9954* (J); Jenny Lind, May 14, 1923, *W. P. Steinbeck* (CA). San Joaquin County: Linden, May, 1896, *Gunnison* (UC); Peters, *E. E. Stanford 952* (S); Farmington, *Hoover 1058* (UC). Tuolumne County: Sonora, April 10, 1925, *E. A. Green* (S); open wooded hill slopes near Bear Creek, *Mrs. W. J. Williamson 49* (CA, S). Stanislaus County: Warnerville, April 29, 1936, *Hoover 1040* (type J, isotype UC); Oakdale, *Hoover 1020* (UC); Montpellier, *Hoover 590* (UC). Merced County: Snelling, *Hoover 964* (UC); Merced Falls, *Eastwood 4384* (CA); Merced, *Hoover 1079* (UC); dry rocky soil, edge of foothills, San Joaquin Valley, *J. T. Howell 9* in part (CA). Madera County: Madera, *Hoover 979* (UC). Napa County: Napa Valley, *Jepson 9981* (J). San Mateo County: Cedro field, Stanford University, May 31, 1922, *Bacigalupi* (S).

This species of the subgenus *Hookera* has long been known to the author, but since the characteristic stamen appendages were overlooked, it was thought to be a form of *Brodiaea synandra* (Heller) Jepson. As a distinct species it was first recognized in the field by W. L. Jepson, who made four collections of it in 1923 and at that time noted its distinctive characters. (W. L. Jepson, Field Book, vol. 39: pp. 171, 173, 177, 191, 199, ms.). The presence of appendages on the stamens has been noted previously only in *B. stellaris* Wats., a species occurring locally in the North Coast Ranges, which has broad appendages very different from the slender undulate ones of *B. appendiculata*. The short capsules serve to distinguish *B. appendiculata* from both *B. synandra* and *B. stellaris*, as well as from other species with which it might be confused. The corms are more deeply seated and have heavier sheathing coats than in other species of *Brodiaea*. The horizontally spreading fruiting pedicels also, are distinctive; among other species of the genus they have been observed only in *B. minor* (Benth.) Wats.

University of California, Berkeley,
May 15, 1936.

REVIEW

Flora of southeastern Washington and of adjacent Idaho. By HAROLD ST. JOHN. Students' Book Corporation, Pullman, Washington. 1937. 531 pp. 14 figs. 1 map. Cloth, \$3.50; paper, \$3.00.

While Thomas Howell was bringing to conclusion his pioneer *Flora of Northwest America*, in 1901, there appeared a modest volume by Charles V. Piper and R. Kent Beattie, *Flora of the Palouse Region*, treating the 663 species and varieties found within a radius of 35 kilometers from Pullman, Washington. The authors expanded this, in 1914, into *A Flora of Southeastern Washington and Adjacent Idaho*, with descriptions of 1,141 species and varieties occurring naturally in the easternmost counties of Washington, from Spokane to Walla Walla, and a narrow strip of neighboring Idaho.

The present work is a lineal descendent of these earlier floras and frankly based upon them, covering the same area as the 1914 work, but it is not, in any sense, a compilation. Every description is original, drawn from the writer's wide field experience, or from personal consultation of specimens in numerous American and European herbaria. The preliminary study and writing has occupied seventeen years and the book affords ample evidence of the pains taken to make it clear, complete and in line with the most recent monographic treatments. A total of 1,473 species and subdivisions of species receives recognition and description.